Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy	Date: February 2018
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0304240N *I (U)Advanced Tactical Unmanned Aircraft System*

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	9.300	-	9.300	14.400	0.000	0.000	0.000	0.000	23.700
3429: *TERN UAS*	0.000	0.000	0.000	9.300	-	9.300	14.400	0.000	0.000	0.000	0.000	23.700

A. Mission Description and Budget Item Justification

This program element provides for the continued maturation and experimentation of Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV) Concept Demonstrator to assess military utility of this technology to meet Navy and Battle Group Commander Warfighting gaps when executing Distributed Maritime Operations. The MALE UAV Technology Demonstrator will also inform requirements for an aviation family of systems to support the Future Surface Combatant (FSC). This project is a Military Intelligence Program.

Project 3429 - This project provides for trade studies, analysis, and continued testing, experimentation, and concept refinement to inform a long term solution for aviation support to Distributed Maritime Operations. A candidate technological concept is being designed by Defense Advanced Research Projects Agency (DARPA) and the Office of Naval Research (ONR) with additional funding provided by the Navy to further mature and assess the technology for Navy missions in a ship based environment. The DARPA/ONR technology concept is a Tactically Exploited Reconnaissance Node (TERN) program and will be the basis for MALE maturation and experimentation. The project name will be revised in the next budget submission.

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	9.300	-	9.300
Total Adjustments	0.000	0.000	9.300	-	9.300
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	9.300	-	9.300

Change Summary Explanation

Schedule:
Project 3429 - Establishes the MALE (TERN) project unit.

Technical: Not applicable

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0304240N / *(U)Advanced Tactical Unmanned Aircraft System*	Project (Number/Name) 3429 / *TERN UAS*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3429: *TERN UAS*	0.000	0.000	0.000	9.300	-	9.300	14.400	0.000	0.000	0.000	0.000	23.700
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The goal of this program is to develop a Concept Demonstrator UAV, and perform technical demonstration of a Medium-Altitude, Long-Endurance Unmanned Aerial Vehicle (MALE UAV) capability from smaller ships. The program will demonstrate the technology for launch and recovery of large unmanned aircraft capable of providing persistent 24/7 Intelligence, Surveillance, and Reconnaissance (ISR) and strike capabilities at long radius orbits. Extending the ISR/strike radius while simultaneously increasing time on station beyond current capabilities from smaller ships will enable novel operational concepts including maritime surveillance and responsive, persistent deep overland ISR and strike, without requirement for forward basing. To achieve these goals, the program will investigate new concepts for aircraft launch and recovery, aircraft logistics and maintenance, and aircraft flight in regimes associated with maritime operating conditions.

MALE technologies have been under development by the Defense Advanced Research Projects Agency (DARPA) and the Office of Naval Research to prove basic capability; the Navy will fund mission utility assessments and envelope expansion and to assess this technology's ability to meet Navy and COCOM warfighting gaps. The MALE UAV Technology Demonstrator will also inform requirements for an aviation family of systems to support the Future Surface Combatant (FSC) POR and Distributed Maritime Operations.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: MALE (TERN) UAV Technical Maturation and Experimentation	0.000	0.000	8.350	0.000	8.350
Articles:	-	-	-	-	-
FY 2018 Plans: N/A					
FY 2019 Base Plans: The funding provides the Government and industry teams for continued aircraft trade studies, concept refinement, technology maturation, aircraft experimentation and testing, envelope expansion, and potential payload integration for meeting Navy mission requirements to inform the Navy's future Family of Systems (FOS). These efforts will also help refine objective performance requirements, initial Key Performance Parameters (KPP), CONOPS, concepts, tactics, doctrine, and reduce risk for the future ship-based UAV FOS. Provides architecture assessments for integrating the MALE ground and air segments to support interoperability with Navy					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0304240N / *(U)Advanced Tactical Unmanned Aircraft System*	**Project (Number/Name)** 3429 / *TERN UAS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Common Control System (CCS). Other UAVs, such as MQ-8, may be used as an additional technology platform for maturation and experimentation efforts. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase from $0.000M to $8.350M results from a new start project unit.					
Title: Technical and Engineering Services ***Articles:*** ***FY 2018 Plans:*** N/A ***FY 2019 Base Plans:*** Initiate and provide Government engineering support, contractor support, program support and travel for continued experimentation. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase from $0.000M to $0.950M results from a new start project unit.	0.000 -	0.000 -	0.950 -	0.000 -	0.950 -
Accomplishments/Planned Programs Subtotals	0.000	0.000	9.300	0.000	9.300

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The program will continue experimentation efforts leveraging existing DARPA/ONR contracts targeted at Navy unique mission applications.

E. Performance Metrics

Performance metrics include successful completion of trade studies; successful demonstration of the minimum design criteria identified in the contracts, and ability to launch and recover in a sea-based environment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0304240N / *(U)Advanced Tactical Unmanned Aircraft System*	Project (Number/Name) 3429 / *TERN UAS*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MALE (TERN) UAV Technical Maturation & Experimentation	C/CPIF	Northrop Grumman : San Diego, CA	0.000	0.000		0.000		6.900	Jan 2019	-		6.900	10.800	17.700	17.700
Requirements, Analysis, and Engineering Assessments	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		1.450	Oct 2018	-		1.450	1.890	3.340	3.340
		Subtotal	0.000	0.000		0.000		8.350		-		8.350	12.690	21.040	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Range Cost	WR	NAWCWD : Point Mugu, CA	0.000	0.000		0.000		0.300	Nov 2018	-		0.300	0.900	1.200	-
		Subtotal	0.000	0.000		0.000		0.300		-		0.300	0.900	1.200	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.310	Oct 2018	-		0.310	0.470	0.780	-
Program Management Support	Various	Various : Various	0.000	0.000		0.000		0.250	Oct 2018	-		0.250	0.250	0.500	-
Travel	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.090	Nov 2018	-		0.090	0.090	0.180	-
		Subtotal	0.000	0.000		0.000		0.650		-		0.650	0.810	1.460	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		9.300		-		9.300	14.400	23.700	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0304240N / *(U)Advanced Tactical Unmanned Aircraft System*	**Project (Number/Name)** 3429 / *TERN UAS*

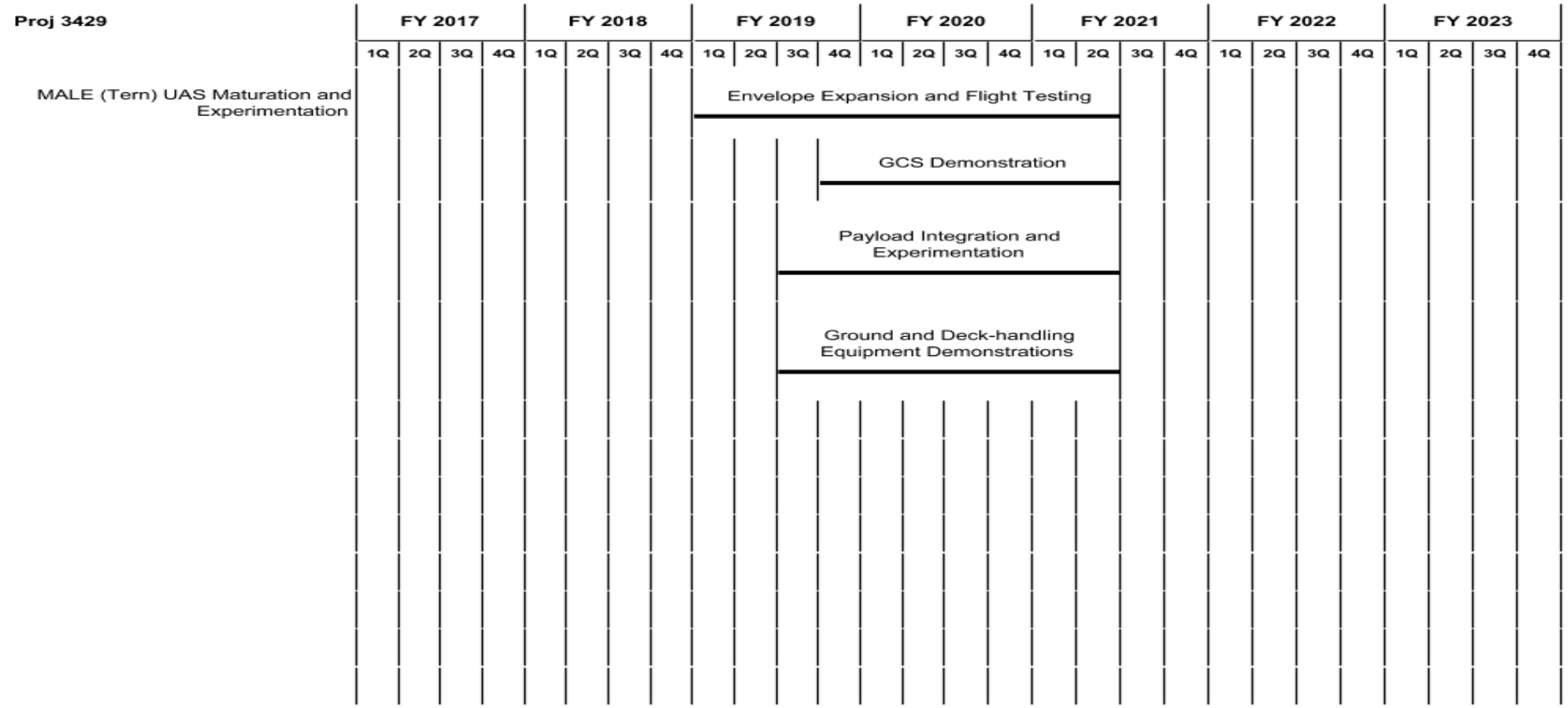

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3429				
MALE (TERN) UAS Maturation and Experimentation: Envelope Expansion and Flight Testing	1	2019	2	2021
MALE (TERN) UAS Maturation and Experimentation: Ground Control System Demonstration	4	2019	2	2021
MALE (TERN) UAS Maturation and Experimentation: Payload Integration and Experimentation	3	2019	2	2021
MALE (TERN) UAS Maturation and Experimentation: Ground and Deck-handling Equipment Demonstrations	3	2019	2	2021